



BIO 310 – 1

Quantitative Methods for the Biological Sciences

Number of credits: 3

Prerequisite:
Math 30

Semester: Winter, 2018
Days: Wed, Fri, 13:00 - 14:15
Room: A2210
Lab – day: Fri 14:30 - 15:45
Lab–Room: A2145

Instructor: John Wiest
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Phone: 403-410-6915
Office: L2115
Office T,R: 3:00 PM or by drop in hours:

Course Description:

This course is designed to give students a basic understanding of descriptive and inferential statistics. Emphasis is placed on practical application and students will learn to analyze and interpret basic statistical research. They will also learn to use computer software to analyze data. Lecture and laboratory components.

Further Course Information:

The course content includes the study and application of procedures for analyzing data and for making inferences based on the analysis. The course consists of 2½ hours of lecture and 1¼ hour of lab/tutorial per week. The course will include at least 3 assignments, a Midterm and a Final Exam

Expected Learning Outcomes:

It is the aim of the course that students acquire the following skills:

1. Ability to apply common types of statistical analysis to problem solving situations
2. Ability to interpret the results of statistical situations and describe these solutions appropriately.
3. Ability to choose appropriate statistical techniques based on a problem situation.

Important Dates:

First day of classes: January 4, 2018
Last day to add/drop or change to audit: January 14, 2018
Last day to request revised examination: March 5, 2018
Last day to withdraw from course without academic penalty: March 16, 2018
Last day to apply for time extension for coursework: March 26, 2018
Last day of classes: April 11, 2018

Final Exam: Wed, April 18, 2018
Time: 1:00 PM – 4:00 PM
Room: A2133

Outline:

TOPICS

Introduction to Statistics
Frequency Distributions
Central Tendency
Variability
Standardized Distributions
Probability
Distribution of Sample Means
Introduction to Hypothesis Testing
Introduction to the t Statistic
The t-Test for Two Independent Samples
The t-Test for Two Dependent Samples
Non-Parametric Tests

Requirements:

A hand-held electronic calculator with *statistical functions* is required. The calculator must be able to accept the input of raw statistical data and provide the student with at least the following output: Σx , Σx^2 , mean, variance, and standard deviation. Students will find that using such a tool will considerably reduce time spent in calculations.

Submission of Assignments:

All assignments should be handwritten and **stapled** together (no paper clips, please) with the student's name in the upper right corner and the assignment number clearly centered at the top of the first page of the assignment. Assignments are to be given to the instructor no later than the assigned due date; if this is not possible, the student must discuss this issue with the instructor in advance before an extension is granted. All assignments should be written in such a way that the logical progression of thoughts and explanations is apparent, all questions are presented in the correct order, and all solutions are clearly visible and identified as such. Where applicable, all solutions should utilize the correct units of measurement (marks **will** be deducted if units are incorrect or absent).

Attendance:

Students are expected to attend all lectures and labs to ensure success on exams, and quizzes. Students not attending lectures may find themselves missing information not covered in the textbook. Any student who is absent for an exam or misses an assignment due date should speak to the professor and, where possible, provide a doctor's note.

Evaluation:

Assignments	35%
Midterm Exam	30%
Final Exam	35%

During both the midterm and final exams, students will be allowed a page of handwritten, self-created notes. This formula sheet should contain any formulas the student feels they will need during the exams, as well as any comments they feel may assist them. Again, this sheet should be created by the students themselves to assist them both in studying and learning materials, and to assist them during the exams.

Grade Summary:

The available letters for course grades are as follows:

<u>Letter Grade</u>	<u>Percentage</u>	<u>Description</u>
A+	96-100%	
A	91-95%	Excellent
A-	87-90%	
B+	83-86%	
B	79-82%	Good
B-	73-78%	
C+	69-72%	
C	64-68%	Satisfactory
C-	59-63%	
D+	55%-58%	
D	50-54%	Minimal Pass
F	Below 50%	Failure

Textbooks:

Introductory Statistics, Illowsky & Dean, <https://openstax.org/details/introductory-statistics>

Policies:

All students have received an Ambrose e-mail account upon registration. It is the student's responsibility to check this account regularly as the Ambrose email system will be the professor's instrument for notifying students of important matters (Cancelled class sessions, extensions, requested appointments, etc.) between class sessions. If students do not wish to use their Ambrose accounts, it is highly recommended that they forward all messages from the Ambrose account to the other account.

During the **Registration Revision Period** students may to enter a course without permission, change the designation of any class from credit to audit and /or voluntary withdraw from a course without financial or academic penalty. These courses will not appear on the student's transcript. Courses should be added or dropped on the student portal by the deadline date, please consult the List of Important Dates. After that date, the original status remains and the student is responsible for related fees.

Students intending to withdraw from a course after the Registration Revision Period must apply to the Office of the Registrar by submitting a Request to Withdraw from a Course by the **Withdrawal Deadline**, please consult the List of Important Dates. Withdrawal from courses after the Registration Revision period will not be eligible for tuition refund. A grade of "W" will appear on the student's transcript.

Students wishing to withdraw from a course, but who fail to do so by the applicable date, will receive the grade earned in accordance with the course syllabus. A student obliged to withdraw from a course after the Withdrawal Deadline because of health or other reasons may apply to the Registrar for special consideration.

Students, who find a conflict in their exam schedule must submit a **Revised Examination** Request form to the Registrar's Office by the deadline date, please consult the List of Important Dates. Requests will be considered for the following reasons only: 1) the scheduled final examination slot conflicts with another exam; 2) three final exams within three consecutive exam time blocks; 3) the scheduled final exam slot conflicts with an exam at another institution; 4) extenuating circumstances. Travel is not considered a valid excuse for re-scheduling or missing a final exam.

Electronic Etiquette

Students are expected to treat their instructor, guest speakers, and fellow students with respect. It is disruptive to the learning goals of a course or seminar and disrespectful to fellow students and the instructor to engage in electronically-enabled activities unrelated to the class during a class session. Please turn off all cell phones and other electronic devices during class. Laptops should be used for class-related purposes only. Please do not use iPods, MP3 players, or headphones. Do not text, read, or send personal emails, go on Facebook or other social networks, search the internet, or play computer games during class. The professor has the right to disallow the student to use a laptop in future lectures and/or to ask a student to withdraw from the session if s/he does not comply with this policy. Repeat offenders will be directed to the Dean. If you are expecting communication due to an emergency, please speak with the professor before the class begins.

Academic Policies

It is the responsibility of all students to become familiar with and adhere to academic policies as stated in the Academic Calendar. Personal information, that is information about an individual that may be used to identify that individual, may be collected as a requirement as part of taking this class. Any information collected will only be used and disclosed for the purpose for which the collection was intended. For further information contact the Privacy Compliance Officer at privacy@ambrose.edu.

Extensions

Although extensions to coursework in the semester are at the discretion of the instructor, students may not turn in coursework for evaluation after the last day of the scheduled final examination period unless they have received permission for a “**Course Extension**” from the Registrar’s Office. Requests for course extensions or alternative examination time must be submitted to the Registrar’s Office by the deadline date, please consult the List of Important Dates. Course extensions are only granted for serious issues that arise “due to circumstances beyond the student’s control”.

Appeal of Grade

An appeal for change of grade on any course work must be made to the course instructor within one week of receiving notification of the grade. An appeal for change of final grade must be submitted to the Office of the Registrar in writing within 30 days of receiving notification of the final grade, providing the basis for appeal. A review fee of \$50.00 must accompany the appeal to review final grades. If the appeal is sustained, the fee will be refunded.

Academic Integrity

We are committed to fostering personal integrity and will not overlook breaches of integrity such as plagiarism and cheating. Academic dishonesty is taken seriously at Ambrose University College as it undermines our academic standards and affects the integrity of each member of our learning community. Any attempt to obtain credit for academic work through fraudulent, deceptive, or dishonest means is academic dishonesty. Plagiarism involves presenting someone else’s ideas, words, or work as one’s own. Plagiarism is fraud and theft, but plagiarism can also occur by accident when a student fails or forgets to give credit to another person’s ideas or words. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from the university college. Students are expected to be familiar with the policies in the current Academic Calendar that deal with plagiarism, cheating, and the penalties and procedures for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean and become part of the student’s permanent record.

Students are strongly advised to retain this syllabus for their records.

Other Important Dates

Jan. 25 Program Day (No classes)
Feb. 19 Family Day (No classes)
Feb. 20-23 Mid-Semester Break (No Classes)
Feb. 28 Midterm Exam
Mar. 30 Good Friday (No classes)
April 2 Easter Monday (No classes)
April 4 Ambrose Research Conference